UBC Centre for Human Settlements

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Defining "Sustainable Development"

William E. Rees
Associate Professor
School of Community and Regional Planning

Faculty Associate
Centre for Human Settlements
The University of British Columbia

1. *Our Common Future: The Road to Sustainable Development*

The concept of "sustainable development" has been around in various guises for several years. (See, for example, Brown 1981.) However, it seems to have acquired popular momentum with the recent publication of *Our Common Future*, the report of the United Nations "World Commission on Environment and Development" (WCED 1987). The UN report addresses the growing tensions between environment and the economy, and advocates "sustainable development" as the only viable route to world political and ecological stability.

The juxtaposition of "sustainable" with "development" naturally inspires the enthusiasm of people on all sides of the economy-environment debate. In light of worsening global environmental trends, any concept that implies we can eat our developmental cake and have the environment too, is bound to have a certain popular appeal.

The World Commission added to the groundswell of popular support by defining sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Nothing very threatening - or substantial - here. Who wouldn't support development that promises all human "needs" will be met indefinitely into the future?

However, in their initial enthusiasm, many people forget that *Our Common Future* goes on to define "needs" as the "essential needs of the world's poor, to which over-riding priority should be given." It also recognizes the "limitations imposed by the state of technology and social organization on the environment's ability to meet (those needs)" (WCED 1987,p.43).

To some ears, such words are a clarion call for political recognition of global economic injustice and real limits to growth. They seem to imply that any serious attempt at sustainable development will require more equitable sharing of the world's resources and acceptance of social and ecological constraints on economic expectations.

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2206 East Mall, Vancouver, B.C. V6T 1W5
(604) 228-5254

But there is another side to the message of *Our Common Future*. The Commission equated sustainable development with "more rapid economic growth in both industrial and developing countries" on grounds that "economic growth and diversification ...will help developing countries mitigate the strains on the rural environment, raise productivity and consumption standards, and allow nations to move beyond dependence on one or two primary products for their export earnings" (WCED 1987, p.89). Accordingly, the Commission suggests "a five- to tenfold increase in world industrial output can be anticipated by the time world population stabilizes some time in the next century" (WCED 1987, p.213).

To those who regard present levels of industrial activity as the root cause of global environmental decline, the Commission's appeal for a "revitalization" of economic growth on this scale seems paradoxical at best. Global development to first world levels, based on existing energy- and material-intensive technologies, is simply not in the ecological cards.

Thus, while *Our Common Future* has contributed to a consensus that the world must move to sustainable development, there is no general agreement on how we might get there. What does seem clear, is that even the easiest path will involve major adjustments to the status quo. The WCED itself recognized that for its projected levels of growth to be environmentally sustainable, "the quality of that development, particularly in industrialized countries" will have to change radically" (WCED 1987, p.213).

Most likely, we will find ourselves travelling several paths at once. We should begin now to make the necessary "radical" changes in present patterns of growth and development and to invest in the ecologically benign technologies that will be needed in the future. But the industrialized countries may soon have to confront the possibility that growth has its limits, that living standards for some may have to be reduced that others might live at all. This has very different implications for the shape of "our common future" than any perpetual growth-based model.

Whatever happens, we need general agreement on the overall goal for sustainable development. One possibility consistent with the present discussion is as follows:

> ***To provide a secure and satisfying material future for everyone, in a society that is equitable, caring, and attentive to basic human needs.***

Sustainable Development: Toward a Working Definition

Prerequisite to developing acceptable policies and plans for sustainable development is a satisfactory working definition of the concept. Just what does sustainable mean in practical terms, and what forms of development would meet these criteria?

To begin, "sustainable" describes any activity that can be carried on indefinitely, while "development" can refer either to a single activity or our entire pattern of socioeconomic activities. Our ultimate concern is obviously with society as a whole, but the logic of sustainable development requires that individual economic activities also be organized on as sustainable a basis as possible. It should also be noted that the concept of development encompasses not only economic activity itself, but also the process responsible for implementing and regulating it.

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THE UNIVERSITY OF BRITISH COLUMBIA
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Taking these factors into account, the following is offered as a working definition of sustainable development on a society-wide basis:

> ***Sustainable development is positive socioeconomic change that does not undermine the ecological and social systems upon which communities and society are dependent. Its successful implementation requires integrated policy, planning, and social learning processes; its political viability depends on the full support of the people it affects through their governments, their social institutions, and their private activities.***

Several additional characteristics of sustainable development are implicit in this definition. Sustainable development:

1. is oriented to achieving explicit ecological, social, and economic objectives;

2. may impose ecological limits on material consumption, while fostering qualitative development at the community and individual levels;

3. requires government intervention, but also the leadership and cooperation of the private sector;

4. demands policy integration and coordination at all spatial scales and among relevant political jurisdictions; and

5. depends on educational, planning, and political processes that are informed, open, and fair.

Some Immediate Implications

Clearly, the shift to sustainable development would be a major undertaking for any society; to contemplate a global shift is daunting indeed. However, growing recognition that any form of global security is unlikely to be achieved by today's dominant development modes, present institutional arrangements, and existing "hard" technologies, may provide the collective incentive needed to make the concept work. Indeed, if the global ecological crisis is as serious as some scientists suspect, sustainable development is not merely an option, it is our only viable choice.

Becoming a sustainable society requires that we learn to live within our ecological means while restructuring the economy on a foundation of new environmentally benign technologies. The transition may be stressful but it is also ripe with economic potential. Those industries, companies, and nations that recognize this potential early enough will build not just ecologically harmless businesses or economies, but will also become the best at fixing others' mistakes. Eventually, the less well-educated, or less responsive countries will find they must purchase the new technologies, products, and processes the long-term thinkers and doers can provide.

Sustainable development also contains the seeds for new forms of social organization. It will require international coordination, national policy direction, regional planning, and cooperative public-private enterprise. This implies great scope for the development of innovative management institutions all spatial scales. For example, new multilateral organizations may be required to monitor and regulate progress on a global scale, while greater planning and development authority will have to be devolved to the regional level to ensure sensitive management of ecosystems.

For all these reasons, sustainable development should not be allowed to become a mere political convenience, a trendy phrase promising change while masking retrenchment. Rather, it should be seen as a real opportunity to evolve a new way of living, albeit necessitated by physical reality and motivated by enlightened self-interest.

Definitions Of Sustainable

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."
— *Our Common Future*

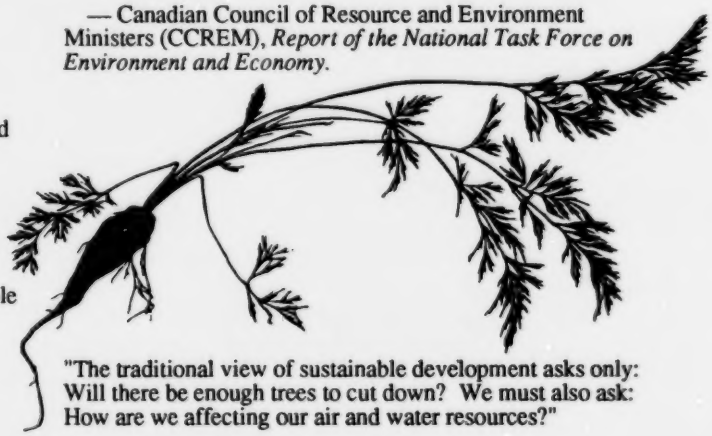
"...we support the goal of sustainable economic development, which we generally define as development which ensures that the utilization of resources and the environment today does not damage prospects for their use by future generations... Sustainable economic development does not require the preservation of the current stock of natural resources or any particular mix of human, physical and natural assets. Nor does it place artificial limits on economic growth, provided that such growth is both economically and environmentally sustainable."

— Canadian Council of Resource and Environment Ministers (CCREM), *Report of the National Task Force on Environment and Economy.*

"Activities are sustainable when they:
1. use materials in continuing cycles,
2. use continuously reliable sources of energy,
3. come mainly from the potentials of being human, ie. communication, creativity, coordination, appreciation, and spiritual and intellectual development.

Activities are non-sustainable when they:
1. require continual inputs of non-renewable resources,
2. use renewable resources faster than their rate of renewal,
3. cause cumulative degradation of the environment,
4. require resources in quantities that could never be available for all people,
5. lead to the extinction of other life forms."

— M. Nickerson, *Guideposts for a Sustainable Future Project.*



"The traditional view of sustainable development asks only: Will there be enough trees to cut down? We must also ask: How are we affecting our air and water resources?"

— D.K. Dawson, Environment Canada.

"Sustainable development is an approach to development which increases the long-term wealth of the earth's inhabitants. It opposes policies and practices which support economic growth by depleting natural resources or degrading and destroying the earth's natural potential. It supports the planned and controlled use and extraction of renewable and non-renewable natural resources.

Sustainable development respects and enhances the capacity of local communities to maintain and develop sustainable livelihoods without destroying the economic, social or resource base. It respects and maintains traditional livelihoods and indigenous culture and societies. It recognizes that communities must define and develop their own solutions to environmental and development problems and that those who are closest to the environment know best how to preserve and protect it. In the long term, it will increase the capacity of local communities to adapt and respond to the changing environmental, social, and economic conditions.

Sustainable development must be set in a broad economic and political context. It works towards shared power and participation, at the local, national, and international level. It must take into account employment and income-generation needs at the community level, and broader economic issues (debt, trade)."

— Canadian University Students Organization (CUSO), *Sustainable Development: A CUSO Education Program.*

"The management of our resources in such a way that we can fulfill our economic, social, cultural and aesthetic needs without permanent impairment to the resource base and the life support systems on which we all depend."

— Environment Council of Alberta, *Conservation Strategies in Canada.*

Development

Compiled by Sharon Bailey

"Sustainable development is an integrated approach - including social, environmental, cultural and spiritual well-being, as well as economic progress in its field of endeavour. It places particular emphasis on ecological balance and social equity in development planning, promoting, for example, decentralization and democracy in the workplace and the broader community."

Principles of Sustainable Development:
1. Popular participation in development
2. Ecological balance
3. Local self-reliance
4. Regional locus of control
5. Incremental gains
6. Cultural self-determination
7. Social entrepreneurship
8. Use of appropriate technologies
9. Long time horizons
10. Self-finance
11. Supportive networks.

— S. Wismer, *Sustainable Development and Urban Life.*

"...sustainable development - a development strategy that manages all assets, natural resources, and human resources as well as financial and physical assets for increasing long-term wealth and well-being. Sustainable development, as a goal, rejects policies and practices that support current living standards by depleting the productive base, including natural resources, and that leave future generations with poorer prospects and greater risks than our own."

— R. Repetto, *World Enough and Time: Successful Strategies for Resource Management.*

"...the management of human use of the biosphere so that it may yield the greatest sustainable benefit to present generations, while maintaining its potential to meet the needs and aspirations of future generations; it emphasizes the maintenance of cultural resources and representative or unique ecosystems, their ecological processes and genetic diversity."

— International Union for the Conservation of Nature (IUCN), *The World Conservation Strategy.*

"Resource use and development, indeed all economic activity, undertaken without reference to global or regional environmental capacities is self-limiting; it simply will not be maintained over the long term. Environmental protection, on the other hand, often seems to be promoted without reference to human needs, or recognition of the role of economic development in meeting them. Sustainable development is a goal which unites both activities."

— B. Sadler, *Environmental Protection and Resource Development: Convergence for Today.*

With reference to land (used very broadly, reflecting the fact that land is a resource base and the location of most human activity):

"Sustainable land use can be defined as the best possible long-term product of the interaction of supply (generally defined in biophysical terms) and demand (described in socioeconomic terms). Given biophysical resources, the objective is to take action in advance, ensuring that the land-base will continue to serve the demands we will place on it, and maintaining sufficient margins of safety."

"Sustainable development is defined as the maintenance of the environmental resource base to sustain those functions which maintain life and socioeconomic activity. In terms of land, this objective could be defined as the maintenance of an adequate quantity of land with required qualities to support, indefinitely, the full range of societal demands which depend on the territorial resource base. These functions could include not only the productive functions of the environment but also the support of special aesthetic values....The objective of sustainable development is therefore to modify demand for, or manage supply of, environmental resources in an anticipatory fashion so that unacceptable outcomes are made less probable."

— Ted Manning, *The Analysis of Land Use Determinants in Support of Sustainable Development.*

Why Bother? Notes on Sustainable vs. "Traditional" Forms of Development

It might be argued that for decades the industrialized countries have managed to sustain their growing economies through technological advances and that they should be able to continue doing so indefinitely. However, there are two fundamental problems with this historic form of "sustainability." First, it has been achieved by continually shifting growing demand from one declining source of resources to another, a pattern that is becoming as true for many potentially sustainable resources (forests, waters, soils, fisheries, even the atmosphere) as it is for inherently nonrenewable ones. Second, the cumulative by-products of present technologies - greenhouse gases, CFCs, toxic wastes, acid precipitation and myriad other forms of pollution - have begun to undermine key ecological functions performed by the remaining biological resource base, and with them the stability of the biosphere as a whole.

It is precisely this pattern of shifting economic opportunism driven by ecologically insensitive technologies that has become unsustainable. There are no more continents to discover, no more "primitive" peoples to colonize. We are our own last frontier. Having reached our planetary limits, mounting pollution and overexploitation of renewable resources threatens the security of people everywhere. Even the oceans and the atmosphere, those vast reservoirs long thought to be indifferent to human activity, are showing critical signs of stress.

Sustainable development differs from traditional development in that it explicitly recognizes our obligate dependency on a healthy biosphere. Ecological processes generate the soils, produce our food, purify the waters, and regulate the climate. Simply put, ecosystems produce "the environment." They can no longer be seen as mere expendable resources to be exploited without limit for non-essential economic gain. A sustainable future depends on the long-term maintenance of the world's ecological capital, and this necessarily takes precedence over the short-term growth of physical or financial capital. The need to maintain the functional integrity of the biosphere has become a real constraint on any form of material growth that might threaten it.

In this context, it is well to remember that global environmental deterioration is the cumulative result of innumerable development decisions affecting local ecosystems all over the world. Many of these are "top-down" decisions taken by central bodies far removed from the direct ecological consequences of their actions. Such institutions as the World Bank, multinational corporations, and national/provincial governments, act on behalf of corporate or national interests that may be quite insensitive to local ecological realities. Even in Canada much economic development is still characterized by a metropolitan-hinterland axis in which resource development decisions taken in "the national interest" override local environmental considerations, including any direct economic dependence affected communities may have on the productivity of local ecosystems.

By contrast, sustainable development places a priority on the need to maintain ecological diversity and productivity in developing regions. It therefore favours increased community control over development decisions affecting local ecosystems, which in turn fosters increased regional self-reliance. This bottom-up approach may require the devolution of greater decison-making authority to regional and local levels, albeit within the broader national/provincial policy framework.

On the other end of the scale, sustainable development recognizes that the biosphere is the common home of all humankind, and that joint management of the biosphere is prerequisite for global political security. Indeed, ecological security can only be assured if the logic and basic principles of sustainable development are accepted and implemented cooperatively by all major nations and developing regions. Sustainable development is therefore necessarily more cooperative at all levels of social organization than are present approaches.

Finally, by recognizing that there may be real ecological limits on quantitative economic growth, sustainable development directs serious attention to the issue of distributive equity as an alternative means of ensuring acceptable living standards for all. The World Commission reported that the 26% of the world's population living in developed countries consumes 80-86% of non-renewable resources and up to 34-53% of food products (WCED p.33). Ethical and and moral factors suggest that reducing the present gap in standards of living between the rich

and poor (between and within nations) may well require that the rich reduce future expectations, and even present consumption, so that the poor may enjoy a fairer share of the world's resources.

Shifting World-Views?

It could be argued that anything less than this broad conceptualization of sustainable development would be an inadequate response to the warnings of both environmental and social scientists. Nevertheless, the implied development model is radical by today's standards because of its acceptance of ecological constraints on human activity, its dependence on social learning and cooperative planning processes, and its recognition that existing ad hoc management practices are part of the problem.

For these reasons, successful implementation of any such approach may depend on a shift in our cultural perception of our proper role in the scheme of things (the evolution of a modified world-view). This may already have started, through enlightened self-interest in the fatal implications of global ecological deterioration. People may ultimately come to understand that it is as socially unconscionable to advance an ecologically bankrupt development idea as it is foolish to promote an economically bankrupt one.

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SHARON K. BAILEY is one of the organizers of UBC's 1988 symposium on "Planning for Sustainable Development." She is a Master's Degree candidate in UBC's School of Community and Regional Planning, specializing in developing methods for implementing sustainable development at the local level.

WILLIAM E. REES holds a Ph.D. in bio-ecology from the University of Toronto. Since coming to UBC in 1969, he has been responsible for teaching courses and conducting research on the ecological basis for planning and economic development in the School of Community and Regional Planning.

In recent years, Professor Rees' research interests have focused on the policy and planning responses to global environmental trends and the search for ecologically sustainable forms of economic development. This led in 1987 to his initiation and supervision of the School of Planning's November 1988 symposium on *Planning for Sustainable Development* as a special planning workshop course. The student participant/organizers recently won the 1989 Student Project Award from the American Institute of Certified Planners for their contribution to the translation of planning knowledge to policy action.

Since January 1989 Professor Rees has lectured on aspects of environment-economy integration at the University of Victoria and Simon Fraser University, and was honoured to be the Elizabeth Laird Distinguished Lecturer on Environment at the University of Winnipeg in March.

At the UBC Centre for Human Settlements, Professor Rees is coordinator of the Centre's "Sustainable Development and Human Settlements" research activities and participates in the design and development of research projects relating to sustainable development. He is the General Editor of the Centre's research publication series on Sustainable Development and Human Settlements.

Selected Publications

"The Ecology of Sustainable Development: Old Myths, New Realities." Invited paper for the Manitoba Research Council's conference on *Economy and Environment*, May 1989.

Planning For Sustainable Development (Supervising Editor). Resource book based on materials prepared for, and proceedings of, a symposium of the same name presented by UBC School of Community and Regional Planning, 25-27 November, 1988.

"The Global Context for Sustainable Development," A background paper prepared for the symposium on *Planning for Sustainable Development*, University of British Columbia, November 25-27, 1988.

"Sustainable Development: Economic Myths and Ecological Realities," *Trumpeter*, 5:4:133-138)

"A Role for Impact Assessment in Achieving Sustainable Development." *Environmental Impact Assessment Review* 8:273-291.

CENTRE FOR HUMAN SETTLEMENTS

J. David Hulchanski, Director

The UBC Centre for Human Settlements (CHS) was established following the 1976 United Nations Conference on Human Settlements held in Vancouver. The interest generated by the "Habitat Conference" led to the formation of a multi-disciplinary research centre within UBC's Faculty of Graduate Studies.

During the past 12 years CHS has pursued research in the broad field of human settlements, welcoming more than 70 visiting scholars, convening 40 research seminars, organizing 28 Habitat Lectures, and publishing 8 books and more than 50 research papers.

Since 1986 CHS has studied the nature and scale of homelessness in Canada within the framework of the International Year of Shelter for the Homeless. The Centre's research staff prepared the reports on homelessness which were submitted by the Canadian delegation to the United Nations Commission on Human Settlements in Nairobi.

In 1988 Dr. J. David Hulchanski, Associate Professor in the School of Community and Regional Planning, was appointed Director following a University review of the Centre's mandate.

The Centre is part of UBC's School of Community and Regional Planning. It reports to the School's Director, Dr. Alan F.J. Artibise, and to an inter-disciplinary governing council.

The aim of the Centre for Human Settlements is to undertake multi-disciplinary research and disseminate information on issues relating to housing, urban and regional development, urban governance, and community development planning. The Centre seeks to engage in policy relevant research which will help communities develop socially, economically and physically.

CHS research is aimed at identifying, studying and promoting processes by which communities can effectively shape and continually improve their own initiatives. The focus is on developing community-level interaction, identity, institutions and initiatives. The role of senior governments is addressed in terms of identifying what government can do to assist communities in their own development. The Centre also seeks to identify lessons which can be shared within and between industrialized and non-industrialized areas of the world.

Research is focused on the following geographic areas: Canada, with a particular emphasis on British Columbia and northern Canada (northern B.C., Yukon and the Northwest Territories); and Australia, Japan and other Pacific Rim countries. CHS also responds to requests for research work in other areas of the world where CHS staff and UBC faculty have expertise.

Address:
2206 East Mall
Vancouver, B.C. V6T 1W5
Canada
(604) 228-5254